

Bulletins

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Bulletin 185

August, 1917

NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF CHEMISTRY

Analysis of Fertilizers
FOR 1917

MADE FOR THE
STATE DEPARTMENT OF AGRICULTURE



BY B. E. CURRY AND T. O. SMITH

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS
DURHAM, N. H.

THE MIRROR PRESS
MANCHESTER, N. H.

THE FERTILIZER INSPECTION FOR 1917.

The samples of fertilizers for the 1917 inspection were collected by Mr. A. G. Weeks for the Commissioner of Agriculture, Andrew L. Felker. Aside from duplicates, 165 samples were received at the experiment station for analysis.

The analytical work in this report has been prepared with the assistance of E. N. Sanders, H. C. Fogg, F. A. Barker, and P. B. Place.

Copies of this report will be sent free upon request to the Director of the New Hampshire Experiment Station, Durham, N. H., or the Commissioner of Agriculture, Concord, N. H.

Composition of Commercial Fertilizers Sampled and Analyzed in 1917.

MANUFACTURER AND BRAND.	NITROGEN.			PHOSPHORIC ACID.				POTASH.		
	Inorganic.	Organic.	Total.		Available.		Insoluble.	Total.		
			Found.	Guaran- teed.	Found.	Guaran- teed.		Found.	Guaran- teed.	
ALPHANO HUMUS COMPANY, New York City.	.15	1.23	1.38	1.25	.50	1.22	1.72	.....	.21	.50
AMERICAN AGRICULTURAL CHEMICAL COMPANY, New York City.										
Ammoniated Fertilizer A.....	.07	.93	1.00	.82	10.32	1.90	12.22	11.00	.....	.....
Ammoniated Fertilizer AA.....	.98	.78	1.76	1.65	9.87	2.70	12.57	11.00	.....	.....
Ammoniated Fertilizer VX.....	2.98	1.14	4.12	4.11	10.05	2.73	12.78	11.00	.....	.....
Bradley's Complete Manure for Top Dressing Grass and Grain, 1916	2.68	1.66	4.34	4.11	8.34	2.48	10.82	9.00	1.09	1.00
Bradley's Eclipse Phosphate, 1916	.55	.85	1.40	1.23	11.07	1.87	12.94	11.00	1.04	1.00
Bradley's General Fertilizer	1.18	.48	1.66	1.65	10.53	2.17	12.70	11.00	.....	.....
Bradley's Grain Fertilizer	.60	.42	1.02	.82	11.66	1.00	12.66	11.00	.....	.....
Bradley's Grass Top Dressing Without Potash.....	4.31	1.23	5.54	4.94	8.08	2.58	10.66	9.00	.....	.....
Bradley's Maine Potato Special.....	2.73	1.54	4.27	4.11	10.24	1.91	12.15	11.00	.....	.....
Bradley's 1916 Complete Manure for Corn and Grain.....	2.26	1.05	3.31	3.29	9.30	2.30	11.60	10.00	1.19	1.00
Bradley's 1916 Corn Phosphate	.80	.98	1.78	1.65	10.69	1.82	12.51	11.00	1.03	1.00
Bradley's 1916 Potato Fertilizer	1.22	1.10	2.32	2.06	9.30	2.50	11.80	9.00	1.16	1.00
Bradley's 1916 Potato Manure	1.58	.95	2.53	2.47	10.29	1.50	11.79	10.00	1.04	1.00
Bradley's 1916 X. L. Super-Phosphate of Lime.....	1.19	1.41	2.60	2.47	9.03	2.77	11.80	10.00	1.11	1.00
Bradley's Root Crop Manure.....	2.39	1.01	3.40	3.29	10.10	2.75	12.85	11.00	.....	.....
Bradley's Special Corn Phosphate without Potash.....	1.06	.74	1.80	1.65	10.12	2.83	12.94	11.00	.....	.....
Bradley's Special Potato Fertilizer without Potash.....	1.12	.53	1.65	1.65	10.21	2.11	12.32	11.00	.....	.....
Bradley's Special Potato Manure without Potash.....	1.74	.89	2.65	2.47	10.10	2.50	12.60	11.00	.....	.....
Bradley's Special X. L. Super-Phosphate without Potash.....	1.64	.99	2.63	2.47	10.12	2.48	12.60	11.00	.....	.....

Cereal & Root Fertilizer.....	1.68	1.02	2.70	2.47	10.39	10.00	2.59	12.98	11.00	...	...
Cleveland General Crop Fertilizer, 1916.....	.44	.45	.89	.82	8.48	8.00	1.54	10.02	9.00	1.09	1.00
Cleveland Potato Phosphate, 1916.....	1.27	.83	2.10	2.06	9.53	8.00	2.06	11.59	9.00	1.02	1.00
Crocker's Potato, Hop and Tobacco Fertilizer, 1916.....	1.29	.88	2.17	2.06	10.30	10.00	1.90	12.20	11.00	1.09	1.00
Extra Quality Potato Manure.....	2.58	1.56	4.14	4.11	10.02	10.00	3.23	13.25	11.00	...	...
Fine Ground Bone.....	...	...	2.96	2.47	...	...	...	24.23	22.88	...	...
Grain and Seeding Fertilizer.....	1.05	.68	1.73	1.65	10.59	10.00	2.20	12.79	11.00	...	...
Grass and Lawn Top Dressing, 1916.....	2.42	1.56	3.98	3.70	8.25	8.00	2.65	10.90	9.00	1.15	1.00
Great Eastern General, 1916.....	.24	.81	1.05	.82	10.59	8.00	1.79	12.38	9.00	.93	1.00
Great Eastern Northern Corn Special, 1916.....	1.23	.92	2.11	2.06	10.13	10.00	1.99	12.12	11.00	1.09	1.00
Great Eastern Potato Manure, 1916.....	2.48	1.23	3.71	3.70	8.10	8.00	2.55	10.65	9.00	1.15	1.00
Grass and Lawn Top Dressing, 1916.....	...	...	...	...	16.65	16.00	1.35	18.00	17.00	...	...
High Grade Acid Phosphate.....	1.51	1.27	2.78	2.47	9.78	9.00	2.15	11.93	10.00	1.07	1.00
High Grade Fertilizer, 1916.....	5.48	1.15	6.63	6.58	9.00	8.00	1.80	10.80	9.00	...	...
High Grade Grass Top Dressing without Potash.....	3.19	.88	4.07	4.11	11.41	10.00	1.50	12.97	11.00	...	...
Odorless Grass and Lawn Top Dressing without Potash.....	1.05	.82	1.87	1.65	10.69	10.00	2.59	13.28	11.00	...	...
Pacific Special Potato Fertilizer without Potash.....	...	...	...	...	15.30	14.00	1.50	16.80	15.00	...	...
14% Plain Super-Phosphate.....	1.00	.67	1.67	1.65	10.88	10.00	1.40	12.28	11.00	1.00	1.00
Quinnipiac Corn Manure, 1916.....	1.12	1.03	2.15	2.06	9.36	8.00	2.18	11.54	9.00	1.05	1.00
Quinnipiac Special Corn Phosphate, 1916.....	.87	.93	1.80	1.65	9.61	10.00	3.20	12.81	11.00	...	...
Quinnipiac Special Corn Manure without Potash.....	1.18	.92	2.10	1.65	10.03	10.00	3.07	13.10	11.00	...	...
Special Soluble Pacific Guano without Potash.....	2.28	.59	1.87	1.65	10.13	10.00	2.67	12.80	11.00	...	...
Special Vegetable Fertilizer.....	2.23	1.14	3.37	3.29	10.31	10.00	3.11	13.42	11.00	...	...
Top Dresser, 1916.....	2.75	1.41	4.16	4.11	7.85	8.00	2.15	10.00	9.00	1.09	1.00
Williams & Clark American Corn Phosphate, 1916.....	1.08	.87	1.95	1.65	11.10	10.00	1.70	12.80	11.00	1.03	1.00

ARMOUR FERTILIZER WORKS,

Chrome, N. J.

Armour's Acid Phosphate.....	...	...	...	...	16.47	16.00	1.34	17.81	16.50	...	...
Armour's Grain Grower Fertilizers.....	1.08	.62	1.70	1.65	8.10	8.00	2.25	10.35	8.50	2.19	2.00
Armour's 5-10-0 Fertilizers.....	1.95	2.22	4.17	4.11	9.68	10.00	2.20	11.88	10.50	...	...
Armour's 4-8 Fertilizers.....	1.92	1.46	3.38	3.29	8.47	8.00	2.13	10.60	8.50	...	...
Armour's 3-8-1 Fertilizers.....	.45	2.08	2.53	2.47	7.28	8.00	2.60	9.88	8.50	1.00	1.00
Armour's 2-5-3 Fertilizers.....	.91	.72	1.63	1.65	8.75	8.00	2.10	10.85	8.50	3.26	2.00
Armour's 2-8-2 Fertilizers.....	.83	.94	1.77	1.65	8.20	8.00	2.10	10.30	8.50	1.98	2.00
Armour's 2-8-1 Fertilizers.....	.14	1.52	1.66	1.65	8.39	8.00	2.10	10.49	8.50	1.04	1.00
Armour's 2-11 Fertilizers.....	.62	1.25	1.87	1.65	10.56	11.00	2.70	13.26	11.50	...	...
Armour's Wheat, Corn and Oat Special Fertilizers.....	.64	.26	.90	.82	7.05	7.00	1.90	8.95	7.50	1.01	1.00

BOWKER FERTILIZER COMPANY,

Boston and New York.

Bowker's All Round Fertilizer, 1916.....	1.48	.64	2.12	2.06	10.75	10.00	1.85	12.60	11.00	1.05	1.00
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Coe Mortimer Company,
New York City.

E. Frank Coe's Columbian Corn and Potato Fertilizer, 1916.....	.70	.74	1.44	1.23	11.27	10.00	1.64	12.91	11.00	1.02	1.00
E. Frank Coe's Gold Brand Excelsior Guano, 1916.....	1.36	....	2.31	2.47	10.63	9.00	1.95	12.58	10.00	1.05	1.00
E. Frank Coe's High Grade Ammoniated Super-Phosphate, 1916.....	1.92	.73	2.65	2.47	10.63	10.00	2.05	13.68	11.00	....	....
E. Frank Coe's High Grade Soluble Phosphate.....	.15	.98	1.13	.82	14.68	14.00	1.30	15.98	15.00	....	....
E. Frank Coe's New Englander Special, 1916.....	.85	.83	1.68	1.65	9.69	10.00	3.30	12.99	11.00	....	....
E. Frank Coe's Original Ammoniated Dissolved Phosphate, 1916.....	1.12	2.33	3.45	3.29	9.01	9.00	2.30	11.31	10.00	1.12	1.00
E. Frank Coe's Standard Potato Fertilizer, 1916.....	.55	.42	.97	.82	11.23	10.00	1.66	12.89	11.00	....	....
E. Frank Coe's XXV Ammoniated Phosphate, 1916.....											

John C. Dow & Co.,
Boston, Mass.

Dow's Pure Ground Bone.....			2.34	2.00				25.32	24.00		
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Essex Fertilizer Company,
Boston, Mass.

Essex Manure for Potatoes, Roots, and Vegetables, 4-10-1	1.54	1.74	3.28	3.28	11.00	10.00	2.45	13.45	11.00	.86	1.00
Essex Market Garden and Potato Manure, 3 1/2-10.....	1.07	1.84	2.91	2.87	10.03	10.00	2.17	12.50	11.00	....	....
Essex Potato Corn and Vegetable, 5-10.....	2.52	1.68	4.20	4.10	10.86	10.00	1.76	12.62	11.00	....	....
Essex Potato Phosphate for Potatoes, Roots and Vegetables, 4-10.....	1.75	2.37	4.12	3.29	10.76	10.00	1.98	12.74	11.00	....	....
Essex Special Phosphate for Potatoes, Grass and Lawns, 6-8	3.32	1.70	5.02	4.92	8.89	8.00	1.98	10.87	9.00	....	....
Essex XXX Fish Fertilizer for All Crops, 3-10.....	.90	1.64	2.54	2.46	9.40	10.00	2.90	12.30	11.00		

Hoosac Valley Lime Co., Inc.,
Adams, Mass.

Adams Lime Ashes.....					.37		.40	.77	.70	.09	1.00
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International Agricultural Corporation,
New York City.

Buffalo Ammoniated Phosphate.....	.21	1.16	1.37	1.20	11.76	12.00	3.05	14.81	13.00		
Buffalo Bone Meal.....	....	....	3.10	2.50	....	....	....	24.94	22.00	....	....
Buffalo New England Special.....	.76	1.24	2.00	1.60	11.43	10.00	3.08	14.51	11.00	....	....
Buffalo Potato and Corn.....	1.02	1.23	2.25	1.70	9.13	8.00	3.05	12.18	9.00	2.55	4.00
Buffalo Potato Truck Manure.....	1.75	1.65	3.40	3.30	8.13	8.00	3.00	11.13	9.00	3.57	4.00

Composition of Commercial Fertilizers Sampled and Analyzed in 1917—Continued.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.				POTASH.		
	Inorganic.	Organic.	Total.		Available.		Insoluble.	Total.		Found.	Guaranteed.
			Found.	Guaran- teed.	Found.	Guaran- teed.					
Buffalo Standard	1.58	1.72	3.30	3.30	8.97	10.00	4.35	13.32	11.00	3.07	2.00
Buffalo Tip Top	.56	.64	1.20	.80	8.14	8.00	3.06	11.20	9.00	.....	.....
Buffalo (vegetable and mineral)	1.65	1.12	2.77	2.50	10.66	10.00	2.52	13.18	11.00	.....	.....
Nitrate of Soda	.....	.....	15.64	15.00	.....	.....	.....	.....	.....	.....	.....
LISTER'S AGRICULTURAL CHEMICAL WORKS, Newark, N. J.											
Lister's Corn and Potato Fertilizer, 1916	1.28	1.06	2.34	2.06	9.29	8.00	1.90	11.19	9.00	1.11	1.00
Lister's Excelsior Guano, 1916	1.75	.90	2.65	2.47	10.29	10.00	2.58	12.87	11.00	.....	.....
Lister's High Grade Special for Spring Crops, 1916	1.43	.74	2.17	2.06	11.39	10.00	2.20	13.20	11.00	1.17	1.00
Lister's Plant Food, 1916	2.0	.82	1.02	.82	11.39	10.00	1.80	13.19	11.00	.....	.....
Lister's Potato Manure, 1916	2.24	2.01	4.25	.11	8.81	8.00	1.49	10.30	9.00	1.11	1.00
Lister's Success Fertilizer, 1916	1.72	.59	1.31	1.23	10.12	10.00	1.78	11.90	11.00	1.02	1.00
Lister's Special Tobacco Fertilizer, 1916	1.28	.89	2.17	2.06	10.86	10.00	1.60	12.46	11.00	1.11	1.00
Lister's Standard Pure Super-Phosphate of Lime, 1916	1.58	1.00	2.58	2.47	9.27	9.00	2.08	11.35	10.00	1.07	1.00
LOWELL FERTILIZER COMPANY, Boston, Mass.											
Acid Phosphate	.....	.....	.....	.....	16.81	16.00	4.49	21.30	17.00	.....	.....
Acid Phosphate	.....	.....	.....	.....	15.65	14.00	1.85	17.50	15.00	.....	.....
Lowell Animal Brand A. High Grade Manure for all Crops, 3-10	1.28	1.72	3.00	2.87	10.60	10.00	2.45	13.05	11.00	.....	.....
Ground Tankage	.....	.....	7.41	7.41	7.90	.....	2.30	10.20	9.15	.....	.....
Lowell Bone Fertilizer for Corn, Grain, Grass and Veg- etables, 2½-10	.84	1.26	2.10	2.05	10.41	10.00	2.09	12.50	11.00	.....	.....
Lowell Corn, Grain and Grass Fertilizer, 5-10	2.31	1.80	4.11	4.11	10.83	10.00	1.87	12.70	11.00	.....	.....

Lowell Empress Brand for Corn, Potatoes, and Grain,
 1½-10 1.15 1.28 1.23 10.69 10.00 2.88 13.57 11.00
 Lowell Ground Bone 2.82 2.46 26.18 20.00
 Lowell Market Gardens and Grass Fertilizer, 6-8 3.15 5.23 4.92 8.91 8.00 1.70 10.61 9.00
 Lowell Market Garden Special Grass and Lawn Dress-
 ing 3.04 4.97 4.92 8.85 8.00 1.63 10.48 9.00
 Lowell Potato, Corn and Vegetable, 5-10 2.12 2.23 4.35 4.10 11.40 10.00 1.20 12.60 11.00
 Lowell Potato and Vegetable Fertilizer, 4-10 1.72 1.68 3.40 3.28 10.00 2.50 12.50 11.00
 Lowell Potato Grower, 4-10-1 1.79 1.31 3.10 3.28 10.45 10.00 2.60 13.05 11.00 1.51 1.00
 Lowell Potato Manure, 3-1081 1.64 2.45 2.46 10.22 10.00 2.18 12.40 11.00
 Lowell Potato Phosphate, 4-10 2.07 1.40 3.47 3.28 10.32 10.00 2.88 13.20 11.00
 Lowell Sterling Phosphate, 1-1256 .74 1.30 .82 12.32 12.00 2.30 14.62 13.00
 Nitrate of Soda 15.19 15.00

THE MAPES FORMULA & PERUVIAN GUANO Co.

The Mapes Tobacco Starter Improved 3.11 .91 4.02 4.12 5.29 6.00 3.81 9.10 8.00 1.07 1.00
 THE NATIONAL FERTILIZER COMPANY,
 New York and Boston.

National Nitrogen Phosphate Mixture No. 3 1.72 .98 2.70 2.47 8.28 10.00 4.30 12.58 11.00
 National Nitrogen Phosphate Mixture No. 4 2.33 .99 3.32 3.29 10.00 3.30 13.30 11.00
 National Tobacco Special without Potash 1.19 3.46 4.65 4.53 4.08 3.00 1.50 5.58 4.00
 National 1916 Eureka Potato Fertilizer 1.61 1.01 2.62 2.47 9.12 9.00 2.76 11.88 10.00 1.19 1.00
 National 1916 XXX Fish and Potash 1.33 .77 2.10 2.06 10.34 10.00 1.90 12.24 11.00 1.15 1.00

NATIONAL GUANO COMPANY, Aurora, Ill.

Sheep's Head Pulverized Sheep Manure17 2.13 2.30 2.25 1.23 1.00 .87 2.10 1.25 1.80 1.50
 NEW ENGLAND FERTILIZER COMPANY,
 Boston, Mass.

New England Corn Phosphate for Grain and Vegetables,
 2½-10 43 1.41 1.84 2.05 10.48 10.00 2.40 12.88 11.00
 New England Potato Corn and Vegetables, 5-10 2.20 1.92 4.12 4.10 10.07 10.00 2.68 12.75 11.00
 New England High Grade Potato Fertilizer, 4-10 2.02 1.37 3.39 3.28 11.23 10.00 1.55 12.78 11.00
 New England Potato Fertilizer, 3-10 1.49 1.04 2.53 2.46 9.90 10.00 2.40 12.30 11.00
 New England Super-Phosphate, A. High Grade Fertilizer
 for all Crops, 3½-10 2.03 .87 2.90 2.87 10.80 10.00 2.10 12.90 11.00

Composition of Commercial Fertilizers Sampled and Analyzed in 1917.—Concluded.

MANUFACTURER AND BRAND.	NITROGEN.			PHOSPHORIC ACID.				POTASH.	
	Inorganic.	Organic.	Total.	Available.		Insoluble.	Total.	Guaranteed.	Found.
				Found.	Guaranteed.				
NITRATE AGENCIES COMPANY, New York City.									
Acid Phosphate N. A. C. Brand.....	.....	.....	.....	16.72	16.00	.88	17.60	.....	.....
Ground Tankage.....	.....	.....	6.37	6.21	6.86	2.69	8.90	.....	.....
High Grade Acid Phosphate.....	.....	.....	.....	17.30	16.00	1.50	18.80	.....	.....
Nitrate of Soda.....	.....	15.64	15.00	.....	.....	.....	.....	.....	.....
OLDS & WHIPPLE, Hartford, Conn.									
Olds & Whipples' Complete Corn, Potato and Onion Fertilizer.....	1.89	1.71	3.60	6.04	6.00	1.60	7.64	6.00	2.52
Olds & Whipple's Dry Ground Fish.....	.....	.....	9.66	4.66	4.50	2.90	7.56	5.50	.....
Olds & Whipple's Tobacco Special Fertilizer.....	.87	3.48	4.35	3.40	3.00	.95	4.35	3.00	.....
PARMENTER & POLSEY FERTILIZER CO., Boston, Mass.									
P. & P. Corn and Grain Fertilizer.....	.21	.82	1.03	12.62	12.00	2.20	14.82	13.00	.....
P. & P. Grain Grower, 1½-10.....	.22	1.36	1.58	9.99	10.00	2.41	12.40	11.00	.....
P. & P. Plymouth Rock Brand, a Reliable Fertilizer for all Crops, 3½-10.....	1.16	1.65	2.81	10.74	10.00	2.15	12.89	11.00	.....
P. & P. Potato Fertilizer, 2½-10.....	.87	1.63	2.50	9.78	10.00	2.32	12.10	11.00	.....
P. P. Special Potato and Corn Fertilizer, 5-10.....	2.26	1.82	4.08	10.19	10.00	2.60	12.79	11.00	.....
THE ROGERS & HUBBARD CO., Portland, Me.									
All Soils, All Crops Phosphate.....	2.18	.61	2.79	6.57	7.00	3.30	9.87	8.00	.....

Oats and Top Dressing.....	5.02	.78	5.90	6.00	6.25	6.00	8.75	15.00	12.00	....	....
Pure Raw Knuckle Bone Flour.....	....	....	3.84	3.82	....	....	....	24.74	24.70	....	....
Rogers & Hubbard Complete Phosphate.....	1.13	.89	1.02	1.00	8.02	....	2.75	10.77	9.00	....	....
Soluble Corn and General Crops Manure.....	1.54	1.00	2.54	2.50	9.64	10.00	6.00	15.64	12.00	....	....
Soluble Potato Manure.....	2.70	1.60	4.30	4.25	7.08	10.00	5.80	12.88	12.00	1.13	1.00
J. W. SANBORN,											
Pittsfield, N. H.											
Prof. Sanborn's Chem. Fertilizer for grass and grain...	3.92	1.27	5.19	4.94	9.15	8.00	1.66	10.81	9.00	....	....
Prof. Sanborn's Chem. Fertilizer for potatoes and corn.	2.30	1.18	3.48	3.29	11.12	10.00	1.95	13.07	11.00	....	....
Prof. Sanborn's Chem. Fertilizer for use in the hill and drill	1.65	.92	2.57	2.47	10.12	10.00	3.00	13.12	11.00	....	....
FRANK SMITH & Co.,											
Lancaster, N. H.											
Frank Smith & Co.'s 2-13	1.50	.33	1.83	1.65	14.45	13.00	1.95	16.40	....	....	....
Frank Smith & Co.'s 4-11	4.79	.11	4.90	3.29	11.82	11.00	.80	12.62	....	....	....
Frank Smith & Co.'s Top Dressing for Grass.....	4.88	.62	5.50	5.50	10.30	9.00	2.00	12.30	....	....	....
WHITMAN & PRATT RENDING Co.,											
Lowell, Mass.											
Ground Bone .....	....	....	2.47	2.46	....	10.00	....	27.80	20.00	....	....
YORK CHEMICAL WORK,											
York, Pa.											
Super-Phosphate .....	....	....	....	....	17.56	16.00	1.10	18.66	....	....	....



